DOCUMENT RESUME

ED 369 357 HE 027 396

AUTHOR	Fleit, Linda H.
TITLE	Self-Assessment for Campus Information Technology Services. Professional Paper Series, #12.
INSTITUTION	CAUSE, Boulder, Colo.
PUB DATE	94
NOTE	32p.; Datatel, Inc., Fairfax, VA funded the publication of this paper.
AVAILABLE FROM	CAUSE, 4840 Pearl East Circle, Suite 302E, Boulder, CO 80301 ($12 members; $24 nonmembers).
PUB TYPE	Guides - Non-Classroom Use (055) -- Tests/Evaluation Instruments (160)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	Accountability; Colleges; Educational Quality; Evaluation; Evaluation Criteria; Evaluation Methods; Evaluation Utilization; Guidelines; Higher Education; *Information Services; *Information Technology; Institutional Evaluation; Questionnaires; *Self Evaluation (Groups); Standards
IDENTIFIERS	CAUSE

ABSTRACT

This paper is a guide to self-assessment of campus information technology services and includes an assessment questionnaire and guidelines developed by CAUSE and EDUCOM. An introduction stresses the role of self-assessment in an overall quality improvement plan. The following section argues that pressures for higher education accountability and campus technology visibility both make the present a particularly good time for self-assessment. The next section defines self-assessment as preventive medicine, a diagnostic tool, a comparative measure, and as a tool to promote alignment with users' assessments. A section on mechanics describes the four basic steps of an assessment: (1) asking questions, (2) answering them, (3) evaluating the results, and (4) constructing an action plan based on what the results revealed. The following section discusses some of the difficulties of dealing with the results. Appendix A contains an assessment tool containing questions on planning, policies and procedures, facilities and staff, products and services, organization and external relationships, and funding. Appendix B reprints the CAUSE/EDUCOM Evaluation Guidelines for Institutional Information Technology Resources. Also included are a list of other titles in this series and a profile of the company that sponsored the paper. (Contains 16 references.) (JB)

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the association for managing and using information technology in higher education

Self-Assessment for Campus Information Technology Services

by Linda H. Fleit

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Sponsor Acknowledgement

CAUSE appreciates the generous support of

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Published by

CAUSE

the association for managing and using information technology in higher education

Professional Paper Series, #12

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1 INTRODUCTION

If the modern organizational self-improvement quest had a single beginning, it was probably with the publication of *In Search of Excellence* by Thomas Peters and Robert Waterman. Many, many books since then (*A Passion for Excellence* by Peters and Nancy Austin, *The Change Masters* by Rosabeth Moss Kanter, and *High Output Management* by Andrew Grove, just to note a few, not to mention all the more-recent attention on the pursuit of "total quality") have led to an unprecedented amount of scrutiny of—and improvement in—service areas throughout our economy.

Each approach differs slightly from the one just before it; each one has its own strategies, theories, and rationale. But there are three important ideas that consistently thread through these approaches:

- high quality service is desirable
- high quality service is necessary
- high quality service comes from just a very few things

Furthermore, fundamental to each of these ideas is the assumption that *service quality can be measured.* In fact, it turns out that in order to create and maintain the very highest levels of quality, measuring and assessing quality must be done on a regular basis. Excellence should not just be assumed or taken for granted; quality levels need to be explicit, assessed, and publicly communicated.

In practical terms, however, most of us take on such a task only when we think there might be some serious problems in our area, or in order to justify additional funding. Understandable, because measuring and assessing quality is not easy to do. Many of the ordinary measures available to typical service organizations, such as repeat customers and strong profitability, are not appropriate in a campus setting where most information technology departments play to a captive audience of users who have no choice but to use their services if they want any services at all. In addition, most campus computer centers have no measures of either profitability or even cost recovery. The number of steady users and the computer center's budget can be identical in two similarly sized computer centers, one delivering high quality services and the other a dismal failure.

Even monitoring the number of user complaints or keeping a problem log is not the answer to the measurement of quality. A department having a larger number of complaints than one on another campus may not necessarily be delivering lower quality services; in fact, the way the complaints are handled is much more indicative of relative service levels. It has been shown over and over that handling a user's complaint or problem in the right way may be the very best method for winning a loyal fan. Similarly, few complaints or a short problem log do not necessarily mean the computer center is doing an excellent job; it may mean the users have become so frustrated by a lack of responsiveness that they have given up complaining.

So it's not a particularly straightforward task to assess quality; certainly results won't come as easily as when we measure CPU cycles or lines of code written in a day. But we have to do it. It's imperative. Why? *Because everyone else on campus already knows the answer.*

2 This Is the Right Time

While a good argument can be made that assessing quality is an activity that can and should be done anytime, there are two important trends in higher education right now that make this the ideal time to do a self-assessment.

- **Technology today is much more visible—to everyone on campus—than ever before in its history.**

We all remember the days when the only places we found campus computer centers were in the basements of buildings designed and dedicated to other purposes. The computer center was the largely unseen setting of some mysterious activities that occasionally resulted in printed payroll checks, class rosters, and, with some luck, an SPSS printout.

Echoing the depth of its typical physical location, computing has traditionally been very much a bottom-up affair. The areas in which we made our first real impact and progress were in the college's daily, operational activities such as the business office and the registrar's office. Administrative offices that take care of the day-to-day business of the college, the library, and faculty engaged in writing, research, and administratively oriented classroom activities (such as grading and other record-keeping) were all increasingly well served by computing in the late 1980s. We then slowly began to make our way up the managerial ladders into deans' and vice presidents' offices and out to the students themselves, both in their classrooms and in providing them with administrative services.

Today, technology is everywhere (actually, we're getting to the point at which it is *so* everywhere that it's almost invisible again). It is making more and more of an impact on campus, and reaching higher and higher places. As we progress through the 1990s, we are beginning to see more longer-range computerized decision support, more actual hands-on use of microcomputers by higher-level administrators and deans, more use of devices such as electronic mail and conferencing, and more interest by presidents and vice presidents in new technology tools for the future. We are even seeing the work itself begin to change: as technology increasingly penetrates the upper reaches of the campus, new ways of accomplishing old tasks are also beginning to emerge, and we are seeing increasing interest in ideas such as "reengineering."

What does this mean for campus computing? For one thing, it means increased visibility for the service departments themselves. Computer and information technology services is emerging from being a back-room support organization in a basement somewhere and increasingly taking its rightful place as a strategic campus contributor. This is good, of course, and something we all wished for, but it has come at the cost of a lot more scrutiny than we ever had to deal with before. More people noticing what benefits computing brings to the institution means more people paying attention to how much it costs, how many people work in the computer center, how fast the maintenance budget goes up, and how often someone needs to have a desktop machine replaced.

With all of the benefits that have accrued from increased visibility has come the added burden of attention from a lot of worried people. That brings us to the other major trend in higher education today:

- **Colleges and universities are experiencing an almost desperate need for accountability.**

Higher education is increasingly being held accountable by the public. Where are all of the dollars going? Are tuition money, grant and foundation dollars, and government funding being sensibly spent? How

well are college students really being educated? Is college today still "worth" attending, and if so, at what price? What is the real purpose of a college education in today's society? These and other soul-searching questions are being asked from virtually all quarters today, including federal and state governments; as a result, higher education is in something of a turmoil in developing and articulating appropriate, well-thought-out, and relevant answers.

The questioning is every bit as intense, and growing increasingly so, internally on campus. How are professors evaluated? Should there be tenure? What should constitute a "core" curriculum? How are top administrators selected? Are we doing enough of the right things for minority and disabled students? Along with these questions, of course, are others concerning resources, and the manner in which they are being spent. Tuition-dependent institutions continue to be concerned about declining enrollments for the 1990s.

Under these circumstances, and especially with computing still being perceived as so expensive, it is quite understandable that hard questions of technological accountability are being asked with increasing frequency. After all, many reason, it makes more sense to have to take a couple of big hits in selected areas than to do an across-the-institution budget reduction. Where do we hit? How about the department we still don't understand very well? The department from which we still have a lot of trouble seeing the return on investment? You know the one— the department mentioned in that article in *The Chronicle of Higher Education*, "The computer center has replaced the library as academe's bottomless pit."[1]

In this climate of accountability, information technology services is at a disadvantage. It has to compete with campus priorities whose benefits may be more immediate or more obvious. Even though there are only a few (usually) who would question whether the computer people are busy (the computer service department is usually an obvious hub of activity), more people than we might realize do question the *value* of what's going on, and whether the campus could be making better choices than continuing to pour money into computers, given limited resources.

There is unquestionably more progress being made in campus technology pursuits, but there is also more of a demand for payoff. More than ever before, benefits need to be clearly stated, and not just technological benefits for their own sake. New initiatives in computing need to be accompanied by benefits for the campus mission itself; contributions to the furthering of the institution's goals, both academic and administrative, have to be clearly and forcefully expressed.

The combination of greater scrutiny brought on by both increased visibility and a growing demand for accountability make this an excellent time to do an assessment of the institution's information technology.

But why should it be a *self*-assessment?

Those of us who are or have been computing directors may know what it's like to be told by the person we report to that he or she has called in an outside consultant to review our department. If you don't know this experience, you're lucky, since it is probably one of the most painful things one can go through. Your main task becomes trying to maintain an objective, non-defensive, "good-soldier" posture while at the same time trying to defend every decision you've ever made to a group of outsiders who don't have a clue about your real circumstances. The worst part is knowing that the review is being conducted because there is a perception, whether based in reality or not, that your department has some very serious problems it can't take care of itself. The experience is nothing short of excruciating.

And what about outsourcing? In a sense, looking at outsourcing as a way of providing the institution's computing services is another way of asking, "How much are you willing to pay for a high-quality computing environment?" John Gehl, last year in *EDUCOM Review*, reflected on this issue of the relationship between *value* and *evaluation*:

> There used to be a lot of TV ads in which the salesman would add product after product to some fabulous offer of juicers and food processors and utensils and ginzu knives, and after each product was added, the frenzied pitchman would ask the question: "*Now* how much would you pay?" Now *that's* evaluation. It's done all the time in the marketplace. It's deciding what something is worth. In the vernacular, it's putting your money where your mouth is. ... The question at evaluation time isn't whether the ginzu knife was able to dice a carrot or whether the software product had functionality; the question at evaluation time is: Look-

ing back on it from where you are now, what should you have told the fellow when he asked you, "*Now* how much would you pay?"[2]

Outsourcing is not just an alternative to be considered only when the internal people are in trouble; it's being looked at more and more today as a sound financial move—a cost-effective vehicle for providing campus computing services. How many computer directors are surprised when the subject comes up? How many have surprise turn to astonishment when an outsourcing company is actually called in to do an evaluation? How many are just completely unprepared to present their administrations with another alternative to outsourcing based on their own objective assessments of the institution's information technology area? Outsourcing may or may not be a good thing for the institution to do, but it's a sure bet that the institution will be in a better position to make this decision if they have solid, viable alternatives to look at.

It is far, far better to do an assessment yourself before it ever reaches a crisis point. It is so much easier to unearth difficulties and deal with them before they reach a level of visibility that turns them into big problems. It is so much easier to make a rational case for keeping computing services inside when you have time to prepare the case fully, without the Sword of Damocles in the form of an outsourcing threat hanging over your head.

Note, by the way, that doing a self-assessment does not preclude your asking an outsider to assist, whether that is someone from within the institution, or a colleague from another campus, or even a professional consultant. There could very well be some significant benefit gained in the objectivity that an outsider usually brings to an assignment of this sort. But it is still a self-assessment if the person is doing it on your behalf, with the results delivered just to you.

Why not ask the users?

Ed Koch, the former mayor of New York City, used to make a habit of asking, "How am I doing?" to anyone likely to give him an answer. He asked it often and unhesitatingly, even when he suspected the answer was not going to be to his liking. Although Koch is no longer mayor, and although his popularity waned dramatically toward the end of his final term, he is still known and respected for having asked the question.

Asking the users of computer services how the computer services department is doing can yield some very valuable information. It is an important way of staying in touch with the users, and of preventing the department from becoming too isolated and solely self-appraising. Asking users their opinions may produce some surprises, or it may confirm what is already known; in either case, it is something that should be done regularly, in both formal and informal ways. However, asking the users to participate in this self-assessment is not appropriate. While, for at least part of the assessment, it is going to be very important to try to see things from the users' point of view, their actual views are not relevant to this purpose, and soliciting them will only be distracting.

That may sound strange given the current politically correct emphasis on customer service, but it isn't really. A self-assessment allows an internal focus and an emergence of an inner-directed evaluation. As individuals, it is important to hear what others think of us, but it is also important (and involves a different task) to ask what we think of ourselves and to try to answer as honestly as possible. It is no different for a department. The locus of evaluation in this case is internal; assessments from external sources require a different strategy.[3]

Who should do a self-assessment?

Everyone should do a self-assessment, at least once a year. Even if you think that you're doing the very best job you could possibly do; that you have the best, most dedicated staff; that users are being very well treated and the administration is being very well served; that funding your department is absolutely the wisest way for the institution to spend its technology dollars, you should do a self-assessment. If you are right about your sense of quality, then the assessment will confirm it with an objective process that you can use as a communications vehicle to others. If you are wrong, you'll have an opportunity to correct your problems before they get out of hand.

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[1] *Chronicle of Higher Education*, 2 May 1990, p. A15.

[2] John Gehl, "Nine Cents' Worth," *EDUCOM Review*, March/April 1993, p. 17.

[3] "Asking the Users: How Are We Doing?" *The EDUTECH Report*, May 1991.

3 What A Self-Assessment Is

The self-assessment offered here is meant to be used by all higher education institutions. It doesn't matter whether the school is public or private, large or small, rich or poor. It doesn't matter how long the institution has had computing facilities, nor whether they are organized in particular ways. The questions will apply in almost every circumstance, and form a package that accomplishes four important tasks.

- **A self-assessment is preventive medicine.**

First, and most important, a self-assessment is preventive medicine. Just like vitamins or an aerobic exercise regimen, a self-assessment can be an invaluable tool in preventing major problems from happening in the first place. For instance, gaining the realization through a self-assessment that one of the things the information technology department ought to be doing is constructing more formal project plans with a great deal of user participation may very well prevent the next major project from going seriously awry.

A self-assessment is an anticipatory mechanism; it is a way to find the kinds of things that should be modified to enhance the computer center's operations and services, and a way to look for signals that there is trouble brewing. Used in this mode, it is proactive instead of reactive; it is a way to break away from constantly putting out fires by finding ways to promote fire safety and prevention.

- **A self-assessment is a diagnostic tool.**

Second, this assessment is a diagnostic tool for a computer services department in trouble and, further, it can provide a roadmap to improvement. When *The EDUTECH Report* published an article on self-assessment a couple of years ago,[4] one of the most interesting responses came from a financial vice president, to whom his institution's computer center reported. He thought the methodology and the sample questions the article outlined were interesting, but doubted that most computer center directors would be inclined to do such an assessment, thereby eventually forcing the need to have an evaluation done by outsiders. He went on to say that the only computer center that would do a self-assessment is the one that doesn't need to.

That could be true if the purpose of the assessment was to figure out where to place blame. But that isn't the point at all. The point is to figure out what's wrong, to identify those factors that are contributing to a less-than-highest-quality computing environment, and then to attack those problems. It doesn't really matter how the problems got there, or who made what decision way back when that led to all this; what matters most is the diagnosis and, based on that, the cure. Saying that the only departments who will do this are the ones who don't need to is the same as saying that the only people who will have their blood tested when they feel overly thirsty all the time are the ones who don't have diabetes.

- **A self-assessment is a comparative measure.**

Third, a self-assessment is a way to get a comparative measure—but only against potential. That is, the major question that a self-assessment asks is, "How well are we doing, *relative to how well we could be doing*?" This is not the same question as, "How well are we doing relative to other institutions?" There are no numeric scores here; this tool will not lead to the higher education version of the *Computerworld 100*.[5] Its purpose is to assess how well the information technology service department is doing the job it has been given to do.

It is also not the same question as, "How well are we doing relative to some arbitrary ideal?" Nor is it a trend analysis; it does not ask, "How well are we doing relative to how well we used to do in the past?" The point is to compare the information technology services department to its own potential. The potential is always relative; it depends on the department's level of resources, the place it occupies in the institution's hierarchy, the legacy of hardware and software decisions that were made in the past, and a whole host of other factors.

It doesn't matter if Majoreastcoast University has brought CAD/CAM capability to every dorm room and you haven't; it doesn't matter if every book you read tells you that you should have implemented wireless communications by now and you haven't; and it doesn't matter if you are maintaining 500 microcomputers this year and last year it was only 400. While all of these comparisons have importance in some sense, they are not part of a self-assessment. What really counts here is whether you are doing the right things and doing them well, given what's possible under your particular circumstances.

- **A self-assessment promotes alignment with users' assessments**

Finally, a self-assessment is a way to more closely align one's own evaluation of quality with the receiver's (user's) evaluation, whether the latter is explicit or not. Up to now, if we measured anything, it was only those things relatively easy to measure: lines of code per day, number of CPU cycles, percent of mainframe downtime, numbers of microcomputers. When all of those numbers seem satisfactory, or fall within the "right" ranges, it may be difficult to understand why the users don't seem happy. One of the important things we are beginning to realize now is that these quantitative measures do not get at the heart of the issue, which is whether the information technology department is actually doing a good job, as seen by its customers and by institutional management.

Earlier, you read the answer to the question concerning why a self-assessment is imperative: "Because everyone else on campus already knows the answer." They do. They may not have articulated it yet, but every user on campus, and every person in the administration and among the faculty who is concerned with the way the institution spends its money, already has a perception of the information technology services on campus. In general, that perception will have less to do with how much (or how little) disk space there is than with how much technical jargon the computer people use when they talk to others. Doing this self-assessment will help you identify why the campus community's perception is the way it is, and, if necessary, how the perception can be improved.

How does a self-assessment differ from an audit?

It is important to keep in mind that a self-assessment is not an audit. The purpose is not to look for areas of control or potential mischief; the emphasis is not on compliance, asset protection, reliability and accuracy of data, or any of those audit-oriented subjects. The questions are designed to examine issues at a more strategic level than in an audit; that is, although they do encourage a deeper look than might be done ordinarily, they are not as detailed or as control-oriented as the ones an auditor would ask. The answers are meant to provide insight into the broad array of services the department offers, and the manner in which those services are administered and delivered.

In addition, the assessment is designed to elicit information, not just data. The answers are meant to be weighed and judged, and are open to a certain amount of interpretation. Many of the answers will be more subjective than objective, and none will be answered numerically.

Most importantly, the focus of a self-assessment is on *effectiveness*, assessing the quality and quantity of technology resources, the department's responsiveness, and the policies that promote effectiveness. The focus of a traditional audit is on *efficiency* and control, the use of resources relative to the production of output, and the procedures used to make things efficient and under control.

[4] "Be Your Own Consultant: Review Computer Services," *The EDUTECH Report*, April 1989.

[5] The *Computerworld 100* is an annual quantitative ranking of the top 100 organizations, measured by the effectiveness of their use of information technology. It is organized by industry, but does not include education, higher or otherwise.

4 The Mechanics

There are just four basic steps in a self-assessment: asking the questions, answering them, evaluating the results, and constructing an action plan based on what the results reveal.

The actual doing of a self-assessment should not be so burdensome that people will run shrieking in the hallways at the prospect of it. To give the whole thing credibility, it should be defined as a formal project, with a beginning and an end, and the head of the information technology department being assessed should be the project manager. However, the assessment itself should take no longer than a week or two, perhaps longer in large institutions, with the writing up of the results taking a bit longer. There is not much, if any, research required to answer the questions, since they are much more qualitative than quantitative. These are usually the sorts of issues that people can respond to directly, without having to look things up, so the assessment is not particularly difficult in terms of information gathering.

The assessment can be used for the entire range of information technology services on campus, or only for a piece of it; for instance, it could be used at one time just for computer services, leaving out telecommunications, audio-visual, and so on, and then at another time, it could include everything. If there is more than one computer center being administered by a single department, the assessment should include all of them at once. However, if there are separate departments for administrative and academic computing, the assessment for each should be done independently. (Comparing the results could be very interesting!)

As many internal information technology staff as possible should be involved in thinking about and answering the questions. For large departments, small group meetings are usually the best way to go, although not necessarily organized along division or position lines. That is, it is likely to be more fruitful if the group answering the questions is made up of a mixture of people, including programmers, operators, user support people, and so on, rather than just one type. In a smaller department, one or two meetings of the whole department will probably be all that's necessary to complete the assessment. In all cases, the results should be distributed back to all who participated.

One of the most important things to remember is that because this is being done internally, there is nothing to defend. The point of the assessment is not to fix blame or to rehash the past. The point is to identify areas of improvement for the future. Therefore, it's in everyone's best interests to be as honest as possible. Again, it may help to use an outsider to assist, but that is not a necessity.

About the questions

The questions in the assessment (which are found in Appendix A) are arranged into six categories: planning, policies and procedures, facilities and staff, products and services, organization and external relationships, and funding. The questions have been developed through a combination of many years of talking with higher education information technology managers; many discussions with other higher education people, including presidents, deans, and chief financial officers; and a great deal of reading about what makes an information technology organization effective. Based on those discussions, observations, and experience, the questions were developed to have a direct relationship between the answers and the probable implications and consequences of the answers.

It is possible that as you read through the questions you may see things that may not appear to be relevant or important in assessing your department. For example, you may think it's okay to have service priorities determined internally in the department. That's the way it's always been, and it seems to work most of the time; besides, most of the users, and certainly most or all of the upper administration, do not want to get involved in this. You and your people are smart enough and have been around long enough to determine what's best for the school. So your answer to the question, "Is priority setting controlled by the users and accountable to the administration?" will be "no," and you might also add, "But so what? It's not a problem that we do it this way." But, in fact, it is a problem or, at least, an incipient one. It has been shown time after time, in countless institutions, that as the demand for services grows, deciding who gets which services eventually puts the computer department in a classic no-win situation. You will have to turn down more and more requests, you will face increasing risk of alienating all end users at one time or another, you will continuously have to rely on your own judgement about what's best for the school, and, inevitably, the wrong person is going to get so angry with you and your department that there will be a major crisis. No matter how fast you dance, or how well you juggle, you will never be able to keep up with the demand and keep everyone happy. You don't need to be the bad guy; what you need is to have the users determining among themselves what's best and then looking to you to be the heroic implementor of their decisions.

In a case like this, there is a certain amount you may need to take on faith. Each question was put into the assessment deliberately, and while it would be difficult to make the case that any "no" answer automatically spells trouble, a question that is answered with a "no," "maybe," or anything less than "yes" at least suggests that the topic could probably use further scrutiny. A great many negative answers probably indicates that the department is either already in, or rapidly approaching, big trouble. On a more positive note, if all or even most of the answers are "yes," then it is probably fair to say that the department is in terrific shape. The greater the number of positive answers, the more assurance the computer services department and others on campus have that things are going well and will continue to go well.

Many of the questions will require you to look at situations from the users' point of view, and to presume what their answers might be to the same questions. You may find it more difficult to answer these, but in many cases your presumption of the answer may be as important as the real answer itself. This is especially true if you decide to follow up the self-assessment with a user survey. Testing your presumptions through a user survey will very likely turn out to be an important and interesting thing to do, although, as mentioned above, asking the users their opinions is not a formal part of this self-assessment process.

Not all of the answers are black or white. Some are, but many are meant to be deliberately thought-provoking and not easily answerable off the cuff. Taken as a whole, they add up to a picture of a well-balanced, effective, high-quality information technology service.

5 Dealing with the Results

By its nature, the assessment will reveal interesting results. Some of these may come as a surprise; some may merely confirm what everyone in the department already knew. In either case, the results should lead to a plan of action.

In the happy circumstance of a wholly positive assessment, the results should be shared with others in whatever way is appropriate. Of course, an information technology services department in this situation will already be held in high esteem on campus, but including the assessment in the department's annual report, for instance, would be a good way to communicate the department's high level of quality without being self-aggrandizing.

The harder situation, of course, is when the assessment turns out to be less than positive. In this case, the results need not be shared with others outside the department; in fact, no one else even needs to know the assessment was done. However, it is important to bear in mind that a lot of negative answers probably indicates that problems are showing up externally anyway. Basically, the department has two alternatives for the next step:

- **Alternative 1: Ignore the results and hope this will all go away.**

This will likely be the most tempting alternative, since it involves doing pretty much the same thing as before. It also can easily be justified by focusing on why "the problems aren't my/our fault": we don't have enough money; the users are too demanding; my boss doesn't understand technology; my boss doesn't understand me (us); the users haven't made enough of an investment to make their computing pay off; all of the above.

The risk in pursuing this alternative is obvious: eventually someone is going to demand an accounting, and you will most likely end up on the receiving end of an outside assessment (and maybe worse). No one will care about the reasons given above, especially the outside consultants called in to do the assessment; they have heard it all before (yawn). There is a much better alternative.

- **Alternative 2: Develop an improvement plan.**

Begin with the assumption that a "no" answer to any question may indicate a problem, even if that problem has not yet manifested itself. Then look at the area in which the greatest proportion of negative answers emerged, decide whether the negative answers really are indicative of problems or potential problems in your particular circumstances (try to be as objective as possible about this), decide whether it's something that can be fixed, and fix it. In many cases, the solution won't even cost anything (in dollars, that is).

Too simple? Remember, the questions were designed to evaluate quality and effectiveness; "no" answers reveal gaps in the ingredients for success, *even if the lack of success hasn't shown up yet.* Filling in the gaps now, beginning with the areas of the greatest number of negative answers, will prevent failure from ever showing its ugly head.

Of course, there will be some things beyond your control. For instance, it isn't necessarily up to you to determine the level of funding the institution is prepared to provide for information technology, or whether to have a high-level policy committee. However, it is entirely possible that you have more control than you think. Start with a positive stance. Assume that you can at least have an influence on these things, even if they

are not directly subject to your control. Sometimes that influence can turn out to be major, or you may be able to influence someone who can influence someone else. The point is to not simply shrug off certain areas just because they are outside your direct domain.

It is also important not to be distracted or deterred by red herrings. It is too convenient an excuse for inaction, for instance, to blame limited resources for everything. But a close examination of whatever negative answers have emerged in your assessment may very well show that it isn't a money issue at all; it's an attitude change that's needed, or a new procedure that needs to be developed, or a new approach to service delivery. It may be entirely possible to effect positive changes without spending a cent.

What if the assessment is wrong?

In general, the results of the assessment should match your intuition—if, that is, you are being honest with yourself. If they do not, and you think the assessment may be wrong (that is, you show more negative answers than you think are really indicative of problems), then maybe it is. The questionnaire is not perfect. It may not match your particular circumstances well enough, or you may find you need to adapt it to your institution and your department. But you need to be careful here that you are not falling into the very understandable temptation to close your eyes to the truth. If you are, it is absolutely inevitable that eventually someone will open your eyes for you.

Ideally, the assessment will pinpoint areas that need some attention, areas where you may have been experiencing feelings too vague to deal with ("Something's wrong but I don't know what it is ..." or "I think we're basically doing okay, but maybe we could be doing better ..."). Often just the process of doing the assessment is beneficial in bringing people in the department together and focusing on the right issues. In such a case, whether the results are positive or negative, and whether they are accurate or inaccurate, something has been gained.

Excellent IT services

As Brian Hawkins wrote in the book he edited for the EDUCOM Strategy Series, *Organizing and Managing Information Resources on Campus:*

> All of us involved in providing and supporting information resources on our campuses must constantly remind ourselves of the ultimate objective of what we are doing, namely, facilitating the scholarship of students and faculty. Except in a very few disciplines, technology is not an end in and of itself—it is the means to achieve some other scholarly aim. Technology, however, has an allure and a seductiveness that occasionally catches all of us, and we forget the original goal as we become captivated with the process.[6]

What, then, are the true ingredients for excellence? On the whole, two characteristics mark the excellent campus information technology service department, and they both fall directly out of the "ultimate objective" Hawkins talks about. The first is that it assists in the efforts to provide and improve the quality of education. The second is that it assists in lowering the cost of administering and delivering that education. In other words, the information technology services provided by the excellent computer center, by contributing directly to the goals of its institution, help make the institution both more effective and more efficient.

It is incumbent upon us, as higher education information technology professionals, to strive for excellence. The information technology department is one of the few departments on campus whose services are highly visible to so many people, and whose services affect on a day-to-day basis the personal productivity of faculty, students, and administrators. It is also one of the few departments with such a large budget. We just have to be as good as possible. It is, therefore, very important to keep asking ourselves how well we are doing.

> Excellence is a game of inches, or millimeters. No one act is, *per se*, clinching. But a thousand things, a thousand thousand things, each done a tiny bit better, do add up to memorable responsiveness and distinction ... .
>
> Tom Peters and Nancy Waters
> *A Passion For Excellence*

[6] Brian L. Hawkins, *Organizing and Managing Information Resources on Campus* (McKinney, Texas: Academic Computing Publications, 1989), p. 11.

Appendix A: Self-Assessment Questions

Section 1: Planning

A. Strategic and long-range planning

- [ ] Is there a multi-year plan for computing and telecommunications in place for the whole institution?
- [ ] If so, was it drawn from institutional objectives, even if those objectives are not fully articulated?
- [ ] Was the planning process a participative and collaborative one?
- [ ] Is the plan updated on a regular basis, such as once a year?
- [ ] Is the plan written in non-technical language with goals and objectives that are meaningful to a broad base of campus people?

B. Operational planning

- [ ] Is there a one-year operational plan in place, with a projected budget?
- [ ] Are annual reports done to show actual activities and expenditures compared with what was planned?

C. Disaster recovery planning

- [ ] Is there a written disaster recovery plan in place?
- [ ] Has it actually been tested?
- [ ] Does it include office-based systems as well as the computer center?
- [ ] Does it include academic computing facilities?
- [ ] Does it include the telecommunications network?

D. Project planning

- [ ] Are there formal, written project plans for every major project the information technology services department undertakes?
- [ ] Have the users participated in creating these plans?
- [ ] Do the plans specify project goals and objectives, deliverables, budgets, responsibilities, staffing levels, and deadlines?
- [ ] Are the project plans constructed with the understanding that there will be changes to the deliverables and that a change order process is needed?

Section 2: Policies and Procedures

A. Customer service

- [ ] Is a service orientation promoted and well understood throughout the department?
- [ ] Are users always well treated and responded to in appropriate ways?

- [ ] If the users had to pay for the department's services with real money, would they?

B. Service level agreements

- [ ] Are there written service level agreements between the information technology department and its users?
- [ ] Do they cover every major service provided by the department?
- [ ] Have these agreements resulted from a negotiation process involving the users and taking into account current resource levels?

C. Status reports

- [ ] Are regular status reports issued to the campus community to describe current usage levels, the tasks awaiting action in each of the service queues, and expected time to resolution?

D. Priority setting

- [ ] Is the priority-setting process for the department objective and well understood?
- [ ] Is it controlled by the users and accountable to the administration?
- [ ] Can the process be bypassed for emergency work without creating a crisis?
- [ ] Is the work backlog short enough not to discourage people from asking for reasonable requests?
- [ ] Is everyone clear on how new technology initiatives are justified?

E. Standards

- [ ] Are there hardware, software, and procedural standards that both computer staff and users are encouraged to follow?
- [ ] Are programs always written the same way, using reusable code and libraries whenever possible?
- [ ] Are there choices within the standards that allow users to retain some local control?
- [ ] Does the department staff widely promote ethical computing to the institution?

F. Security

- [ ] Are the computing facilities secure?
- [ ] Is data security taken seriously?
- [ ] Does the security function include procedures for department staff as well as guidelines for users for decentralized data and equipment?
- [ ] Are there sufficient edits to make sure bad data do not enter any of the systems?
- [ ] Are there watchdog procedures to make sure unauthorized access to data is recorded and followed up on?

G. Problem tracking

- [ ] Is there a system in place for recording, tracking, and resolving problems ?
- [ ] Is it clear to the users whom to call for help?
- [ ] Is there an emergency user notification process in place for such things as machine outages?

H. Inventories

- [ ] Are inventories kept of all computing resources, including microcomputers, terminals, printers, and supplies?

Section 3: Facilities and Staff

A. User access

- [ ] Are facilities in convenient and safe locations?
- [ ] Are all of the services and facilities provided by the department easy to access, and easy to obtain assistance for?

- [ ] Are facilities in convenient and safe locations?
- [ ] Would a new user know where to go to get involved with computing?
- [ ] Is there user documentation for every service area in the department?
- [ ] Is it well written and accurate?

B. Utilization reports

- [ ] Are there formal ways of measuring actual usage of each of the major services areas within the computer department, such as mainframe(s) CPU hours, online transactions, programming hours, printed pages, help desk requests, microcomputer allocations, e-mail messages, etc.?

C. Capacity planning

- [ ] Are usage statistics checked regularly against capacity on items such as mainframe response time, operator overtime hours, and disk storage?
- [ ] Are there established ways of dealing with both under- and over-utilization?

D. Productivity tools

- [ ] Are fourth-generation tools, such as non-procedural programming languages, relational database management systems, and CASE tools, either in use already or planned for near-future use?
- [ ] Are they, or will they be, accessible by both administrative and academic users?

E. Research and development

- [ ] Is there a "research and development" function within the department to assure that technical innovations and recent developments are not overlooked?

F. Staff background and experience

- [ ] Do all staff members have experience in higher education?
- [ ] Are the "politics" of higher education institutions an accepted part of the work environment?
- [ ] Do the staff who work directly with end users understand the users' work environments, including goals and objectives?
- [ ] Do all staff members have enough technical expertise?
- [ ] Do most or all staff members use microcomputers?
- [ ] Does everyone in the department have excellent interpersonal communications skills, both orally and in writing?

G. Staff training

- [ ] Is there a formal staff training and education program?
- [ ] Is it reviewed on a regular basis to make sure it is up to date and serving genuine staff needs?
- [ ] Is it geared toward the higher education environment?
- [ ] Are the skills and talents of the staff well matched with user service needs, as opposed to the department's perception of service needs being shaped by the staff's current strengths and capabilities?
- [ ] Are staff members cross-trained so that service areas are not vulnerable to someone's absence?

H. Staff attitude

- [ ] Do staff members see themselves as productive work partners with their users?
- [ ] Do they have high self-esteem without being arrogant or unapproachable?
- [ ] Is morale in the department good?
- [ ] Does the staff feel well rewarded for its efforts?

- [ ] Is everyone in the department clear on what is expected from them?

I. Staff turnover

- [ ] Is the turnover rate among the computing staff at a high enough level to regularly bring in fresh ideas, but low enough so that it is not disruptive?
- [ ] Are open positions filled relatively quickly?
- [ ] Are compensation strategies (taking into account benefits and intangibles) competitive, or at least reasonable?

J. Student employees

- [ ] Does the center make use of student workers in every case where feasible?
- [ ] Are the students encouraged to see themselves as staff members, with corresponding rights and responsibilities, especially concerning data security, reliability of performance, and attitude?
- [ ] Do students generally tend to stay with the department throughout their academic careers?

Section 4: Products and Services

A. Direction

- [ ] Are the department's products and services moving toward a distributed computing environment?
- [ ] Is the department's philosophy supportive of self-sufficiency for end users?
- [ ] Are there tools available to promote end-user computing, such as a report writer, download software, and a query capability,?

B. Architecture

- [ ] Is the system architecture sufficiently flexible to promote end-user computing and control?
- [ ] Is the right combination of mainframes, microcomputers, and minicomputers used to provide solutions to end users?
- [ ] Are data definitions consistent and understood by all those creating and having access to data?
- [ ] Is the data communications network widespread throughout campus?

C. Applications development

- [ ] Are there formal ways of determining which applications should be supported by purchased software, which should be developed in-house, and which should be a combination of the two?

D. Delivery

- [ ] Are projects always completed on time?
- [ ] Are deadlines always met?
- [ ] Are budgets always adhered to?
- [ ] Are the deliverables always perceived as valuable by the recipients?
- [ ] Does the department always fulfill its service level commitments?

E. User Training

- [ ] Is there a training strategy for users?
- [ ] Does it make the best use of a variety of resources, including self-paced instruction, classroom training, one-on-one assistance, and video?

F. Quality assurance

- [ ] Is there a formal quality assurance function in the department?
- [ ] Does it have oversight on all service matters, including program maintenance, administrative production, mainframe response time, data security and integrity, etc.?

G. Backlog

- [ ] Is the backlog of service requests, especially for applications programming changes and enhancements, at a reasonable level?
- [ ] Is it short enough so as not to build up a "hidden" demand or guilt on the part of users in asking for something?

H. Outreach

- [ ] Does the department have a customer outreach function?
- [ ] Are there ways to let academic and administrative users know about technological innovations in their areas and new sources of materials and information?
- [ ] Are users regularly canvassed to determine how the department can be helpful to them?

Section 5: Organization and External Relationships

A. Organization

- [ ] Are the institution's information technology services organized in such a way as to promote both economies of scale and end-user responsiveness?
- [ ] Has the institution achieved the right balance of centralization and decentralization so that the entire community is being well served in the most cost-efficient ways?
- [ ] Is there sufficient coordination among related service areas to assure the institution that everyone is moving in the same direction?

B. Reporting

- [ ] Does the computer services department report to the right level within the institution?
- [ ] Does it report to a person knowledgeable enough about computing issues to be able to provide substantive guidance and support?
- [ ] Does the president support information technology for the institution as a whole?

  Does the department get enough of the right kind of attention?

C. Advisory committees

- [ ] Is there a computing advisory committee made up of high-level faculty and administrators to advise on broad policy and priority matters?
- [ ] Does this group meet at least twice a year?

D. Users groups

- [ ] Is there a users group (or perhaps more than one) that discusses operational matters and helps resolve priority issues and matters of resource allocations among computing services users?
- [ ] Does this group meet at least six times a year?

E. Data security and integrity

- [ ] Are users responsible for the data kept on computers?
- [ ] Is there a consistent flow of data throughout the institution so that processing cycles, census dates, and backup procedures are both understood and used by everyone?

F. External support

- [ ] Are there resources on campus, in addition to the computer services department, that are also supporting users' needs?
- [ ] Are there library staff members, department-based "power users," or application-specific users groups (such as microcomputing) from which users can get help or advice?

G. User expectations

- [ ] Are expectations of end users realistic, given the institution's funding of information technology, capabilities of current technology, and their own perceptions of what their investment needs to be (education and training, participation in planning and setting priorities, providing specifications, review, and evaluation of deliverables)?

H. User satisfaction

- [ ] Are the users' perceptions about both the quality and quantity of computer services favorable?
- [ ] If the computer department were in a competitive situation, would it retain its customer base?
- [ ] Are the users generally willing to abide by the guidelines and standards set by the computing department?
- [ ] Are user satisfaction surveys conducted on a regular basis?
- [ ] Do the users hold the department's staff members with whom they work in great esteem?

I. Management satisfaction

- [ ] Are the administration's perceptions of the efficiency and effectiveness of computer services favorable?
- [ ] Does the department have influence with decision-makers?
- [ ] Is the person in charge of information technology services thought of as a part of the institution's "management team"?
- [ ] Do top-level people make regular use of the department's facilities and services?

J. Communications

- [ ] Are there both formal (regular meetings, newsletters, open door hours) and informal ways of communicating with others on campus?
- [ ] Are they used by everyone in the department?

K. Credibility

- [ ] Does the department have credibility on campus?
- [ ] Are the staff's opinions sought and valued?
- [ ] Is the department a regular participant in other planning activities, such as new building construction or building renovation, capital campaign planning, enrollment management, and so forth?

Section 6: Funding

A. Level

- [ ] Is funding at an appropriate level to support the institution's technology goals?
- [ ] Does the level of funding accurately reflect the level of importance that technology has to and for the institution?
- [ ] Does information technology services receive a steady percentage of the institution's budget from year to year?

B. Funding requests

- [ ] Do requests for funding for additional resources (programming time, microcomputers, disk space, etc.) come from the users, rather than from the computing department?

C. User awareness

- [ ] Are all users aware of the cost of computing?
- [ ] Is there a mechanism (for example, a charge-out system) which encourages users to make use of computing services in an efficient manner?
- [ ] If there is no charge-out, do users have to justify their requests for services in some way to the people to whom they report?

- [ ] Do users make educated requests by appreciating and understanding fully the costs (dollars, time, etc.) and consequences (adjustment of their and others' deadlines) of their requests?

D. Gifts

- [ ] Are donations and gifts-in-kind actively solicited from alumni and companies?
- [ ] Are the activities of the computing department presented in such a way that donors are motivated to give support to these efforts?
- [ ] Are computing initiatives included in grant proposals and, if there is one, in the capital campaign?
- [ ] Are there guidelines for the solicitation and acceptance of technology gifts to the institution?
- [ ] Is there a way of ensuring both consistency and usefulness of any hardware, software, or communications products that might be donated?

E. Capital budgeting

- [ ] Is there a capital budgeting process for information technology to minimize unexpected costs and to provide for orderly growth?
- [ ] Is a replacement or depreciation factor built in?

F. Generating income

- [ ] Have ways to develop income been explored?
- [ ] Has a student fee or a tuition increase been considered?
- [ ] Is there a possibility of selling technology resources to outsiders (for instance, microcomputer training)?
- [ ] Are grant opportunities pursued on a regular basis?
- [ ] Has the institution thought about reselling telephone services, cable TV services, and/or computers to students?

G. Outsourcing

- [ ] Has outsourcing some or all of the information technology services been explored?

APPENDIX B

The *CAUSE/EDUCOM Evaluation Guidelines for Institutional Information Technology Resources* are reprinted here with permission from CAUSE and EDUCOM. CAUSE is a nonprofit professional association whose mission is to enhance the administration and delivery of higher education through the effective management and use of information technology in colleges and universities, and to help individual members develop as professionals in the field of information technology management in higher education. EDUCOM is a nonprofit consortium of higher education institutions which facilitates the introduction, use, access to, and management of information resources in teaching, learning, scholarship, and research. Since the publication of these guidelines, CAUSE and EDUCOM have been joined by the Association of Research Libraries in the creation of the Higher Education Information Resources Alliance (HEIRAlliance), which plans to undertake a revision of these guidelines in 1994 to recognize the increasing importance of networking information resources and its impact on academic libraries.

CAUSE/EDUCOM

EVALUATION GUIDELINES FOR INSTITUTIONAL INFORMATION TECHNOLOGY RESOURCES †

The purpose of this document is to provide institutions and regional accrediting associations with evaluation guidelines for information technology resources that they could use as a reference when developing their own standards for this area. These guidelines have been developed based on accreditation team experiences. They also have been reviewed and endorsed by the CAUSE and EDUCOM Boards, two key organizations in the information technology field in higher education (see back page).

INTRODUCTION

In the last decade, institutions of higher education have invested heavily in information technology resources. In particular, the availability of low cost, high powered desktop workstations has accelerated the move to distributed computing and high speed local and national networks. Organizational structures, often the most traditional parts of our universities, have been changing in response to the growing importance of information technology resources to the achievement of institutional missions.

Recently, calls from within and without the university to "take stock of how we are doing" have been heard. While self-assessment is not a new phenomenon in higher education, much national attention has been focused on it as a result of national reports on the "state of higher education."

One of the primary approaches to evaluation in higher education is the regional accreditation process. Accreditation is a voluntary, non-governmental effort by institutions. Its basic goals are to:

- Assure the educational community, the governing board, and the public that an institution has clearly defined educational objectives and has developed an environment that supports achieving those objectives according to agreed standards.
- Encourage educational improvement by self-study and periodic evaluation by qualified professionals.

† *Information Technology Resources—This includes academic computing, administrative computing, and telecommunications resources (voice, data, and video). Since accrediting guidelines have been established for libraries, these guidelines do not focus on that area.*

The accreditation process is overseen through regional and specialized agencies (for instance, engineering and business administration) which develop accreditation guidelines and standards and administer the periodic team visits. For a general accreditation visit these can be separated by as much as ten years.

In most cases the accreditation team review is preceded by the development of an extensive self-study report by the institution that is organized around accreditation guidelines and standards. Such guidelines and standards are published by each accrediting agency. Only recently have information technology issues reached the attention of the accrediting agencies through the process of review and development of the guidelines and standards.

In order to assist with one small part of the evaluation process, both self-initiated and by accrediting agencies, we offer these guidelines for information technology resources. We avoid a prescriptive approach but rather offer a set of questions that will help institutional planners clarify their approach to providing these important resources. In addition, these guidelines will help institutional management with self-assessments that are part of the periodic accreditation process.

These guidelines were developed and approved by the Boards of CAUSE and EDUCOM, the two major national organizations dealing with information technology issues in higher education.

GENERAL REQUIREMENTS

Information technology resources, including software, data bases, computers, networks, staff, and other resources, support institutional academic programs and institutional management/operations at appropriate levels.

1. *Institutional Planning.* The institution, in its planning, recognizes the need for management and technical linkages among information resource bases (libraries, academic computing resources, administrative computing resources, telecommunications networking, and other learning resource centers).

2. *Access.* Information technology resources, in conjunction with other learning resources, are conveniently accessible to all students, faculty, and staff.

3. *Staffing.* Professional staffs with appropriate expertise are available to assist the faculty, students, and staff in making effective uses of all information technology resources.

4. *Academic Program Support.* The academic programs are supported by the appropriate information technology resources such as software, documentation, data bases, hardware, networks, etc.

5. *Management Support.* The institution's senior administration recognizes the need and supports the effective uses of information technology resources. The institution's operations and management are supported by the appropriate information technology resources, including applications software, data bases, documentation, hardware, networks, etc.

6. *Resources.* The institution's resources (staff, budget, equipment, facilities, etc.) adequately support the information technology resources and services function.

7. *Information Technology Planning.* A well developed planning process involving faculty, senior administrators, staff, and students is in place for the institution's information technology resources and services.

8. *Committees.* Appropriate structures, such as user and policy committees, exist to provide guidance for the planning of the institution's information technology resources and services.

GUIDELINES

The following sections provide questions to help the evaluators focus more directly on various aspects of the general requirements for information technology resources. Rather than being prescriptive, these questions highlight areas that should be explored to better understand the requirements for integrating information technology resources into the institutional mission.

Guideline #1: Quality of Applications Software and Hardware

Computing software and hardware resources are appropriate in quality, depth, and currentness to support the institution's mission through its academic program offerings and its institutional operations and management.

1.1 Are software and hardware resources appropriate in quantity and quality to meet the needs of the curriculum and research on and off campus and the needs for institutional management and operations?

1.2 Are the applications software and hardware resources regularly updated to meet the current academic and administrative program needs?

1.3 Are the acquisitions and gifts of software and hardware consistent with the academic and administrative program needs?

1.4 Are the written policies and procedures for the acquisition of software and hardware kept current and are they widely circulated among academic and administrative departments?

1.5 Do policies and procedures exist that encourage the legal and ethical uses of software by students, faculty, and administrative personnel?

1.6 If an institution relies on the computing resources of other institutions, does it have a well-conceptualized rationale specifying the roles of both on- and off-campus computing resources?

Guideline #2: Support Services

The planning and acquisition of new information technology resources are timely, and the ongoing support services (documentation, development, consultation, training, maintenance, etc.) meet the needs of the institutional users.

2.1 Are faculty and administrators provided an opportunity to contribute in the planning, selection, and evaluation of the information technology resources needed by the academic and administrative programs?

2.2 Are adequate support services (training, consultation, documentation, development, maintenance, etc.) provided to faculty, students, and administrative personnel to meet their academic and administrative program needs?

2.3 Are budget allocations for the acquisition and the ongoing operations of information technology resources services sufficient to support the academic and administrative programs, and are they consistently maintained from year to year?

Guideline #3: Availability of Resources

Software and hardware resources are readily available on campus, and where needed off campus, for use by the institution's academic community and its administrative units.

3.1 Do the operating hours of the campus computing centers and computing laboratories provide convenient access to faculty and students from both on- and off-campus locations?

3.2 Where off-campus resources are used as part of the institution's programs, are students and faculty provided convenient access to these resources?

3.3 Does a training program in the use of information technology resources exist for the benefit of students, faculty, and staff, including students in continuing education and off-campus programs?

3.4 Are there policies and procedures to ensure the integrity and security of information used by faculty, students, and administrators?

Guideline #4: Network Access

The telecommunications network capabilities are appropriate to provide faculty, students, and staff convenient access to information resources on and off campus.

4.1 Is there a campuswide telecommunications plan for voice, data, and video?

4.2 Is the networking access to on-campus information technology resources convenient to faculty, staff, and students?

4.3 Is there appropriate access to external information technology resources for faculty, students, and staff?

4.4 Are sufficient resources (staff, budget, equipment, and facilities) available for the support of telecommunications?

Guideline #5: Facilities

The current and planned facilities for information technology resources and services are adequate in quantity and quality.

5.1 Are the campuswide computing/telecommunications centers and computing laboratories appropriate for the academic and administrative programs and nature of the institution?

5.2 Does campus space/facilities planning incorporate the needs and standards for information technology resources and services?

Guideline #6: Institutional Uses

The institutional environment encourages faculty and staff to make appropriate and innovative uses of information technology resources to improve academic and administrative programs.

6.1 Does the institution's mission articulate the role and degree of importance information technology resources play in its academic and administrative programs?

6.2 Are policies, procedures, and incentives in place to encourage faculty to make appropriate and innovative uses of information technology resources to improve the academic program?

6.3 Are policies and procedures in place to encourage administrative staff to make appropriate and innovative uses of information technology resources to improve the operation, management, and decision making of the institution?

Development of these Guidelines

The idea for developing guidelines that might be used by accrediting agencies in evaluating information technology resources on college and university campuses was first proposed to CAUSE and EDUCOM by Robert G. Gillespie. At the time, Mr. Gillespie was Vice Provost for Computing at the University of Washington, and his idea grew out of his experiences serving on several accrediting committees for the Western Association of Schools and Colleges. He had also drafted material on computing for the revised handbook on accreditation for WASC.

The idea began to take shape with the appointment in December 1986 of two CAUSE Board members—David L. Smallen, Director of Information Technology Services and Institutional Research at Hamilton College in Clinton, New York, and Thomas W. West, Assistant Vice Chancellor for Computing and Communications Resources for The California State University System—to work on an ad-hoc basis with similarly appointed EDUCOM representatives—James Moss, Director of Computing Services at the Naval Academy, and Dr. Smallen, who represented EDUCOM as well as CAUSE because of his concurrent service on the EDUCOM Board, with Mr. Gillespie as a member at large. This joint committee worked on the guidelines for more than a year, during which time the notion was expanded to include the use of the guidelines not only for accreditation, but also for self-evaluation, which in the end emerged as a primary purpose.

When the committee had worked out an explanation of how the guidelines might be used and an explanation of the accreditation process, the final draft of the document was approved by both the EDUCOM Board of Trustees and the CAUSE Board of Directors in the spring of 1988. CAUSE and EDUCOM gratefully acknowledge the creativity and working contribution of all the above-named individuals toward making these guidelines a reality.

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An examination of the management structures and approaches that can make the application of new technology successful. Focuses on research and writings of management and communication professionals on organizational culture, managing change, end-user focus, attention to detail, and the importance of "fun." The author shares experiences of the Maricopa Community Colleges in these processes. Funded by Digital Equipment Corporation. 30 pages. 1991. *$8 members, $16 non-members.*

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by Richard N. Katz and Richard P. West

A discussion of a "network organization" vision which the authors see as a necessary response of colleges and universities to challenges of the 1990s. Strategies set forth in this paper support an information-intensive modern higher education institution, requiring increasingly sophisticated leadership and an administrative infrastructure which is optimized for service, speed, quality, and productivity. Funded by the IBM Corporation. 22 pages. 1992. *$8 members, $16 non-members.*

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edited by Robert C. Heterick, Jr.

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by Anne Woodsworth and Theresa Maylone

An exploration of the idea that professionals who manage information on campus—whether from the computing or library community—are part of a single "job family." The authors report results of a study designed to determine how similar or dissimilar jobs were in libraries and academic computing in selected universities, and to test a methodology for measuring their comparability. Published in cooperation with the Association of College & Research Libraries and the College and University Personnel Association. Funded by Apple Computer, Inc. 28 pages. 1993. *$12 members of CAUSE, ACRL, and CUPA, $24 non-members.*

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A joint publication of CAUSE and the League for Innovation in the Community College

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A New Approach to Information Technology Planning in Community Colleges

By Jan A. Baltzer

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***The Learning Action Plan*, funded by IBM; 44 pages, 1994; $15**

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